

REMARKS

By the present amendment, Applicants have amended Claims 1 through 20, and canceled Claims 21 through 40. Claims 1 through 20 remain pending in the present application. Claim 1 is the sole independent claim.

The Examiner has required election among the inventions of Groups I and II. During a telephone conversation on November 29, 2001, Applicants' representative provisionally elected with traverse to prosecute the invention of Group I - namely, Claims 1 through 20. This is to affirm the election. Non-elected Claims 21 through 40 have been canceled. Applicants reserve the right under the provisions of 35 U.S.C. § 121 to file a divisional application directed to the non-elected subject matter.

In the recent Office Action, the Examiner rejected Claims 1 through 20 under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1 through 20 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Veasley et al. in view of Bennett et al. This rejection is respectfully traversed. Applicants will advance arguments hereinbelow to illustrate the manner in which the presently claimed invention is patentably distinguishable from the cited and applied prior art. Reconsideration of the present application is respectfully requested.

In response to Examiner's rejections of Claims 1 through 20 under 35 U.S.C. § 112, second paragraph, as being indefinite, Applicants have deleted, by the present amendment, the term "foam-like" from the claims. The term "foam-like" was presented to indicate that the backing had foam-like characteristics, and may be used in place of foam tapes, but is not comprised of foam. Applicants do not feel that the term is ambiguous, however, it is not considered necessary. The removal of the term "foam-like" by the present amendment does not narrow the scope of the claims in any manner, but merely eliminates an unnecessary limitation. Applicants respectfully submit that Claims 1 through 20, as amended, meet the specific requirements of 35 U.S.C. § 112, second paragraph.

With respect to Examiner's rejection of Claims 1 through 20 under 35 U.S.C. § 103

over Veasley et al. in view of Bennett et al., Applicants respectfully point out that all of the claim limitations of the present invention are simply not found in the prior art of record. Although, the primary reference Veasley et al. indicates that the pressure sensitive adhesive membrane (membrane) disclosed therein may be used in a multi-layered tape wherein the membrane serves the purpose of a backing layer, and further indicates that the membrane in a non-preferred embodiment may have glass microspheres mixed in the adhesive membrane, no support is provided to have an acrylic tape backing with hollow glass microspheres interspersed evenly therein.

Furthermore, the Bennett et al. reference applies exclusively to pressure sensitive adhesives. An embodiment of the Bennett et al. reference is a foam-like pressure sensitive adhesive having glass microspheres interspersed therein which is applied to a conventional tape backing (made of paper or plastic). See column 5, lines 51-53 and column 6, lines 2-6 and lines 39-45. It is not obvious to combine a pressure sensitive adhesive membrane with a pressure sensitive adhesive to arrive at the acrylic backing utilized in the present invention. There is no motivation to combine the pressure sensitive adhesive compound of Bennett et al. with a pressure sensitive adhesive membrane (having undesirable hollow glass microspheres according to Veasley et al.) to arrive at the present invention.

The prior art reference must be considered in its entirety, including disclosures that teach away from the claims. See MPEP 2141.02; see also, W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). The invention of Bennett et al. teaches tape backings made of paper or plastic while the invention of Veasley et al. teaches an adhesive membrane which may have a layer of adhesive applied thereto and may have glass microspheres mixed therein the non-preferred embodiment. There is no rationale for combining these two references when considered as a whole to arrive at the present invention. Furthermore, there is no motivation to combine these references found in the art themselves.

It is well established that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438

(Fed. Cir. 1991). "To support a conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). Clearly, there is no motivation to combine these two cited references to arrive at the present invention other than the present disclosure.

Furthermore, an artisan having ordinary skill in the art would not combine the present references to arrive at the present invention without the teachings of the present disclosure. It is well understood that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination, and is, therefore, insufficient to establish *prima facie* obviousness. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicants respectfully request references to support Examiner's assertion that the motivation to combine the references (to arrive at the present invention) was suggested at the time the invention was made and without the disclosure found in the invention itself.

Additionally, the Veasley et al. reference does not indicate a desirable percentage of glass microspheres to be interspersed in a membrane and much less in a pressure sensitive adhesive membrane utilized as a tape backing. The Veasley et al. reference states that "[t]he use of glass microspheres is a nonpreferred embodiment as the addition of glass fillers appears to reduce the improvements in both internal strength and low temperature shock resistance of cellular pressure-sensitive adhesive membranes of the invention." (Column 10, lines 28-32). This sentence, which teaches away from the present invention, indicates that such membranes having glass microspheres would manifest reduced internal strength. Membranes with reduced internal strength would not serve as a backing layer. Clearly, tape backings must have increased internal strength to prevent disintegration.

Applicants respectfully point out that the membranes of Veasley et al. is phase-separated. An acrylic copolymer phase forms an acrylic phase and an elastomer phase

wherein one phase is a continuous phase, and preferably an acrylic continuous phase with an elastomer phase present in an interconnected network. (Column 5, lines 1-4). The invention of Veasley et al. contains a saturated hydrocarbon elastomer, or blend of hydrocarbon elastomers, in addition to the 70 to 98 parts acrylic polymer. Combining the disclosure of Bennett et al. with Veasley et al. to arrive at the present invention would require the removal of the elastomer(s), which would render the invention of Veasley et al. unsuitable for its intended purpose. In other words, to remove the elastomer(s) to arrive at the present invention would drastically reduce the adhesion and mechanism of conformability of the membrane of Veasley et al. thereby rendering the resultant membrane unsuitable for its intended purpose.

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Furthermore, the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, therefore, the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The present proposed modification would both render the prior art invention unsatisfactory for its intended purpose, as discussed herein, and change the principle of operation of the prior art invention.

Veasley et al. appears to additionally teach away from the present invention by indicating that a membrane according to the invention therein has improved internal strength over other membranes containing unsaturated or no elastomer. (Column 5, lines 5-9). This assertion indicates that a membrane-backing lacking the saturated elastomer would possess substantially less internal strength than a membrane-backing having the saturated elastomer. This assertion clearly teaches away from the present invention, which does not contain any elastomer. Additionally, the adhesive membrane of Veasley et al. has surfactant to assure even distribution of the voids. (See column 9, lines 28-37.) The surfactant assures a continuous elastomer phase. (See column 9, lines 38-44.) The backing of the present invention does not contain surfactant nor does it contain "voids", as discussed hereinafter. Modifying the invention of Veasley et al. to

arrive at the present invention would further render the invention therein unsuitable for its intended purpose.

The acrylic foam-like backing is a primary emphasis of the present invention. The emphasis of the Veasley et al. reference is a pressure sensitive adhesive membrane containing voids. In other words, the invention of Veasley et al. has gas pockets distributed throughout. When glass microspheres are added to the invention therein, the pressure sensitive adhesive membrane still contains additional voids. In any case, the adhesive membrane of Veasley et al. "has a cellular structure providing at least 10% voids, said percentage being on a volume basis". (See Column 8, lines 66-68.) The only voids or gas pockets in the backing of the present invention are found in the hollow glass microspheres themselves, otherwise voids are avoided; hence, the use of the term "foam-like" in the specification. (See specification page 13, lines 1-7.)

A surface analysis was performed on the foam-like baking via a scanning electron microscope analysis, as discussed in the provisional patent application from which the present application claims priority. (See provisional application No. 60/216,733.) Fig. 2 of the provisional application shows a photocopy of a cross sectional photo taken at a magnification of 200x. The round areas shown are the result of broken hollow microspheres. In the majority of samples tested no voids are evident. (See the enclosed photocopy of the photo.) Clearly, the backing of the present invention is very different from the adhesive membrane of the invention of Veasley et al., and therefore, the resulting pressure sensitive adhesive tapes are also very different.

Furthermore, the adhesive membrane of Veasley et al. is tacky having good adhesive qualities. The backing of the present invention does not serve as an adhesive and requires a second layer of pressure sensitive adhesive to provide the adhesive qualities of the resulting tape. Examiner appears to be applying the pressure sensitive adhesive art to the present invention without taking in to account the fact that the claims of the present invention address the constituency of the backing and not the adhesive. Examiner indicates this when she states that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated two alkyl acrylate monomers and two polar monomers informing the

acrylic polymer motivated by the desire to obtain an acrylic adhesive having good internal strength and appropriate polarity". (Office action page 4, lines 12-15, emphasis added.) Applicants are not trying to form an acrylic adhesive. Applicants are motivated to form an acrylic foam-like backing (that is a backing having evenly interspersed hollow glass microspheres therein) with a conventional pressure sensitive adhesive applied to at least one surface thereof.

In light of the above discussion, Applicants respectfully point out that the reference Bennett et al. does not appear relevant to the presently claimed invention accept as an example of a pressure sensitive adhesive that might be applied to the backing of the present invention to arrive at the pressure sensitive adhesive tape thereof. Although the invention of Bennett et al. is drawn to a pressure sensitive adhesive, the only reference to a backing therein is to "suitable substrates" which include tape backings that are primed/unprimed paper or plastic. (See Column 6, lines 43-45.) The disclosure and claims of the Bennett et al. reference exclusively involves the pressure sensitive adhesive which is applied to any suitable backing whereas the emphasis of the present invention involves the backing to which is applied a suitable pressure sensitive adhesive.

For this reason alone, the present invention is not obvious in light of Veasley et al. (drawn to a pressure sensitive adhesive membrane), in view of Bennett et al. (drawn to a pressure sensitive adhesive); such a combination is quite unreasonable to arrive at a "foam-like backing" according to the present invention. Furthermore, the references teach away from each other as well as away from the present invention. Bennett et al. utilizes "at least one tackifier that is miscible in the polymerization product at room temperature". (See column 1, lines 56-57). The term "miscible" therein means "that the final pressure sensitive adhesive does not exhibit macroscopic phase separation as evidenced by optical clarity at room temperature." (See column 1, lines 58-60). The Veasley et al. invention is a phase-separated membrane. These two requirements are clearly mutually exclusive. The invention of Bennett et al. has no phase separation which is a substantial emphasis of the invention therein while the invention of Veasley et al. emphasizes a phase-separated membrane having at least one continuous phase (preferably, the elastomer).

Furthermore, the acrylate polymer chosen in Bennett et al. is chosen because of its miscibility with the desired tackifier. (See Column 2, lines 14-22.) Also, Bennett et al. discloses that "[i]t is not desirable to include more than 5 parts of the polar monomer because the polar monomer impairs low energy and oily surface adhesion, and reduces tackifier miscibility." (Column 4, lines 29-32.) The present invention appears to utilize more than 5 parts of the polar monomer in the backing. All of these requirements teach against the combination of these two references.

Applicants traverse Examiner's assertion that "the claims do not require that the first and the second monomers be different." (See Office action page 4, lines 16-17.) The terms "first" and "second" clearly indicate different elements. It is well known for claims to be drafted using the terms "first" and "second". Applicants' intention is for a first monomer to be different from the second monomer in the same backing; however, there is not a list of specific monomers which may be used as the first monomer but not as the second monomer, and vice versa. In other words, a backing may have monomer "A" as the first monomer and monomer "B" as the second monomer, while another backing may have monomer "B" as the first monomer and monomer "A" as the second monomer. The first and second monomers, however, are different monomers so that each tape backing has two different alkyl acrylate monomers and two different monoethylenically unsaturated polar copolymerizable monomers. Applicants prefer not to amend the claims to add language indicating that the terms "first" and "second" must be different, as such an amendment, though solely for clarification's sake, is unnecessary and might be deemed to effect the "scope" of the claim resulting in loss of the right to use of the Doctrine of Equivalence during litigation for the life of the patent. (See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed. Cir. 2000.)

Applicants strongly traverse Examiner's assertion that In re Aller, 105 USPQ 233 (1955) supports the statement "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have altered the amount of alkyl acrylate monomer, polar monomer and hollow glass microsphere [sic], since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re*

Aller, 105 USPQ 233. It would have been obvious to the skilled artisan to have optimized the amount of alkyl acrylate monomer, polar monomer and hollow glass microsphere, motivated by the desire to obtain an acrylic adhesive having good internal strength, appropriate polarity, slidability and bondability." (Office Action, page 4 line 18 through page 5 line 4.) *In re Aller* refers to an application for a process where the applicant therein had modified the temperature and acidity of a reaction to arrive at a more efficient process. See *In re Aller* at 1-2. Clearly, the modification of temperature and acidity are quite different from combining the pressure sensitive adhesive membrane of Veasley et al. and the pressure sensitive adhesive of Bennett et al. to arrive at a novel acrylic backing having a conventional pressure sensitive adhesive layer thereon according to the present invention.

Similarly, Applicants traverse Examiner's assertion that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have altered the amount of the crosslinking agent; since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art." (Office Action at page 5.) Examiner again cites *In re Aller*, 105 USPQ 233 to support this assertion. The "general conditions", such as temperature and acidity, do not include adding a crosslinking agent, a filler, fumed silica, initiator and etc. Clearly, the present modifications of the Veasley et al. reference exceeds the concept of "general conditions". Furthermore, no amount of temperature, acidity changes, pressure changes, nor any other change in general condition would transform the invention of Veasley et al. into the present tape backing.

Furthermore, Examiner states "[i]t would have been obvious to the skilled artisan to have optimized the amount of the crosslinking agent motivated by the desire to enhance the cohesive strength of the foam adhesive tape." (Office Action at page 5, emphasis added) The backing utilized in the adhesive tape is not adhesive. The motivation of the present invention is a tape which has a conventional pressure sensitive adhesive disposed on a novel backing. The backing has many advantages which includes recovery after compression but does not include "increased cohesive strength" per se other than perhaps the cohesive strength between the backing and the

adhesive layer placed thereon. The resulting tape has the cohesive strength inherent in the conventional pressure sensitive adhesive disposed thereon.

Applicants would typically request a reference to support Examiner's taking Official Notice of "the equivalence of multifunctional acrylate monomers for their use in *the adhesive composition* and the selection of any of these known equivalents would be within the level of the ordinary skill in the art" (Office Action at page 7, emphasis added); however, since the present invention does not reside in an adhesive composition, Examiner's Official Notice is irrelevant to the present application.

In conclusion, Applicants reiterate that there is no motivation to combine the references to arrive at the present invention found in either of the cited and applied references. It is further noted that such a motivation would be unlikely since Veasley et al. is a phase separated pressure sensitive adhesive membrane and Bennett et al. is a single phase pressure sensitive adhesive. The novelty of the present invention resides in the acrylic backing layer and not in the conventional pressure sensitive adhesive layer. Examiner's Office Action appears to confuse the two layers.

Applicants respectfully submit that for at least these reasons, Claims 1 through 20 are allowable over the prior art applied of record. Applicants believe no further fees are due with the filing of this Response; however, if it is determined that additional fees are required, please charge our Deposit Account No. 13-0235.

Respectfully submitted,

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Version with Markings to Show Changes Made

A marked-up version of the amendments are shown below showing additions with underlining and deletions between brackets.

In the Claims:

The replacement Claims 1 through 20 are as follows:

Claim 1

1. (Amended) An acrylic [foam-like] pressure-sensitive adhesive tape comprising:
 - (a) a layer of an acrylic [foam-like] backing comprising
 - (i) from about 88% to about 92% of an acrylic polymer comprising:
from about 35% to about 45% of a first alkyl acrylate monomer having alkyl groups which contain from 4 to 12 carbon atoms,
from about 30% to about 40% of a second alkyl acrylate monomer having alkyl groups which contain from 4 to 12 carbon atoms,
from about 6% to about 10% of a first monoethylenically unsaturated polar copolymerizable monomer, and
from about 1% to about 2% of a second monoethylenically unsaturated polar copolymerizable monomer; and
 - (ii) from about 8% to about 12% of hollow glass microspheres dispersed evenly in said polymer; and
 - (b) at least one layer of a pressure-sensitive adhesive.

Claim 2

2. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 1, wherein the acrylic polymer includes from about 0.3% to about 0.5% of initiator.

Claim 3

3. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 2, wherein the initiator comprises at least one photoinitiator.

Claim 4

4. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 1, wherein the acrylic polymer includes from about 0.05% to about 0.07% of a crosslinker/chain extender.

Claim 5

5. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 4, wherein the crosslinker/chain extender is a multifunctional acrylate.

Claim 6

6. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 4, wherein the crosslinker/chain extender is a multi-ethylenically unsaturated copolymerizable monomer containing at least two carbon-carbon double bonds.

Claim 7

7. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 4, wherein:

the crosslinker/chain extender is taken from the group consisting of ethylene glycol diacrylate, triethylene glycol diacrylate, 1,4-butanediol diacrylate, 1,6-hexanediol diacrylate, trimethylolpropane triacrylate, pentaerythritol triacrylate, tetraethylene glycol diacrylate, and methacrylates and combinations thereof.

Claim 8

8. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 1, wherein the acrylic polymer includes from about 1% to about 2% of a filler.

Claim 9

9. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 8, wherein filler is a fumed silica.

Claim 10

10. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 8, wherein filler is a surface modified silica.

Claim 11

11. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 1, wherein:

the first alkyl acrylate monomer is iso octyl acrylate,

the second alkyl acrylate monomer is 2-ethylhexyl acrylate,

the first monoethylenically unsaturated polar copolymerizable monomer is acrylic acid,

the second monoethylenically unsaturated polar copolymerizable monomer is acrylamide, and

the hollow glass microspheres are borosilicate glass.

Claim 12

12. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 11, wherein the acrylic polymer further comprises:

from about 0.3% to about 0.5% of initiator,

from about 1% to about 2% of a filler, and

from about 0.05% to about 0.07% of a crosslinker/chain extender.

Claim 13

13. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 12, wherein the initiator comprises at least one photoinitiator.

Claim 14

14. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 13, wherein the photoinitiator is benzoin ethyl ether.

Claim 15

15. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 11, wherein the filler is fumed silica.

Claim 16

16. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 11, wherein the filler is a surfaced modified silica.

Claim 17

17. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 11, wherein the crosslinker/chain extender is 1,4 butanediol diacrylate.

Claim 18

18. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 11, wherein the acrylic [foam-like] backing comprises:

- from about 40% to about 41% isoctylacrylate;
- from about 36% to about 37% 2-ethylhexyl acrylate;
- from about 8% to about 9% acrylic acid;
- from about 1% to about 2% acrylamide; and
- from about 10% to about 11% borosilicate glass.

Claim 19

19. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 18, wherein the acrylic [foam-like] backing further comprises:

- from about 0.35% to about 0.45% benzoin ethyl ether;
- from about 1% to about 2% fumed silica; and
- from about 0.055% to about 0.065% 1,4 butanediol diacrylate.

Claim 20

20. (Amended) The acrylic [foam-like] pressure-sensitive adhesive tape according to claim 1, wherein the [foam-like] backing further comprises:
a sufficient amount of colorant to depart color to the adhesive tape.